

Memorandum

DeLoach
1-Mr. Rosen
1-Mr. Sullivan
1-R. D. Cotter

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TO : Mr. W. C. Sullivan

DATE: 2/18/66

FROM : D. J. Brennan, Jr.

1-Mr. Schütz
1-Liaison

SUBJECT: UNKNOWN SUBJECTS;

PROCESSING LOSS OF 61 KILOGRAMS OF URANIUM-235
IN NUCLEAR MATERIALS AND ELECTRONICS CORP. (NUMEC),
PITTSBURGH, PENNSYLVANIA, 4-17-65
ATOMIC ENERGY ACT

CLASSIFICATION

Unclassified Per DOE
Letter 4-16-86 + 6-6-86

ALL INFORMATION CONTAINED

HEREIN IS UNCLASSIFIED

DATE 4-9-82 BY SP-1 GSK

On 2/17/66, Mr. Howard C. Brown, Assistant General Manager, Atomic Energy Commission (AEC), outlined to Liaison AEC's findings with regard to apparent sloppy management of nuclear materials by NUMEC, an AEC subcontractor. Since April, 1965, AEC has made extensive internal technical checks at NUMEC and has reported the situation to the Joint Committee on Atomic Energy of the Congress. The Joint Committee was told by AEC on 2/14/66 that in the absence of evidence or suspicion of a violation of law, AEC had determined that inquiry by FBI was not then warranted. However, AEC has since decided it should make more penetrating checks into NUMEC's operations, including interviews with some present and former employees, but before doing so felt FBI should be consulted to see if it desires to assume investigation of the matter. Under the circumstances, it is not felt we should do so.

BACKGROUND

According to Brown, NUMEC received 1012 kilograms of uranium-235 from AEC to process into fuel elements for nuclear reactors for space propulsion. This subcontract was completed 10/31/64. In April, 1965, an AEC inventory indicated a loss, fixed by later AEC check in November, 1965, at 61 kilograms, valued at \$764,000. Prior to this determination, AEC had many meetings and discussions with NUMEC officials and conducted extensive internal investigation. Relatively unproductive technical searches of NUMEC premises and waste disposal pits were also made. In addition, a survey of the plant's operations since 1957 revealed that NUMEC had had a total cumulative loss, on all AEC subcontracts, of 178 kilograms, all but 61 of which AEC considers properly accounted for by normal processing losses. While it cannot say unequivocally that theft or diversion of the 61 kilograms has not taken place, AEC believes that NUMEC consistently underestimated its processing losses and that the loss (61 kilograms) being charged to the latest subcontract actually represents an accumulation of losses over an 8-year period. However, because the NUMEC records system was not then so set up, it could not be determined when the various losses occurred or whether material provided for the latest

(8)

REC-79
MGT-8
CONTINUED - OVER

Document 12

Memorandum Brennan to Sullivan

RE: UNKNOWN SUBJECTS;
PROCESSING LOSS OF 61 KILOGRAMS OF URANIUM-235,
NUCLEAR MATERIALS AND ELECTRONICS CORP. (NUMEC),
APOLLO, PENNSYLVANIA, 10/31/65
ATOMIC ENERGY ACT

subcontract was used, knowing or inadvertently, to offset losses on other contracts.

According to Brown there will be no financial loss to the Government as NUMEC has agreed to pay for the 61 kilograms. In addition, NUMEC now has a better system for controlling nuclear materials and improvement is also expected through NUMEC's hiring of a former AEC official, James Lovett, who worked on the AEC inspection of November, 1965. Brown commented incidentally that AEC is consulting with Justice for guidance regarding possible conflicts of interest in regard to NUMEC's hiring of Lovett.

OBSERVATIONS:

From AEC correspondence with the Joint Committee made available by Brown it is evident that the new inquiry contemplated by AEC at NUMEC is prompted by searching questions the Committee has been directing at AEC regarding controls exercised by AEC over nuclear materials. It is believed that this situation up to now has been rightfully treated by AEC as an administrative matter within its responsibility and there appears to be no basis for us to take any action unless and until AEC's inquiries develop more information indicative of a violation coming within our jurisdiction. AEC has assured that we will be immediately informed if such information is developed. Since the materials involved are Government property and thus any criminal activity later revealed conceivably would involve the Theft of Government Property statute as well as the Atomic Energy Act, this matter has been coordinated with the General Investigative Division.

RECOMMENDATION:

That Liaison orally advise AEC that under the present circumstances, we do not intend to assume any investigative responsibility in this matter but will rely on AEC to inform us of any further developments coming to their attention which would indicate a violation within our jurisdiction. Liaison will thereafter follow closely with AEC. This will be confirmed in writing. (TO AEC - AND DEPT. SHOULD ALSO BE ADVISED)

117-2564-X8
~~117-2564-X~~
~~117-2-1447~~

BY LIAISON

Date: March 1, 1966
To: Director
Division of Security
Atomic Energy Commission
From: John Edgar Hoover, Director

1 - Liaison
1 - [redacted] b2/f

*Hand by in 1/66
with 2/14/66
Gut*

Subject: UNKNOWN SUBJECTS;
PROCESSING LOSS OF 61 KILOGRAMS OF URANIUM-235,
NUCLEAR MATERIALS AND ELECTRONICS CORPORATION,
APOLLO, PENNSYLVANIA
ATOMIC ENERGY ACT

*Unclassified Per DOE
letter 4-16-85 + 6-6-85*

On February 17, 1966, Special Agent [redacted] of this Bureau conferred with Mr. Howard C. Brown of the Atomic Energy Commission (AEC) regarding captioned matter.

Mr. Brown advised there were indications that the Nuclear Materials and Electronics Corporation (NUMEC), an AEC subcontractor, was lax in the management of nuclear materials. He stated that since April, 1965, AEC has made extensive internal technical checks at NUMEC and has reported the situation to the Joint Committee on Atomic Energy of the Congress. The Joint Committee was told by AEC on February 14, 1966, that in the absence of evidence or suspicion of a violation of the law, AEC had determined that inquiry by the FBI was not then warranted.

According to Mr. Brown, NUMEC received 1012 kilograms of uranium-235 from AEC to process into fuel elements for nuclear reactors for space propulsion. This subcontract was completed on October 31, 1964. In April, 1965, an AEC inventory indicated a loss, fixed by a later AEC check in November of 1965, at 61 kilograms valued at \$764,000. Prior to this determination, AEC had many meetings and discussions with NUMEC officials and also conducted extensive internal investigation. Technical searches of NUMEC premises and waste disposal pits were also made. In addition, a survey of the plant's operations since 1957 revealed that NUMEC had had a total cumulative loss on all AEC subcontracts.

ALL INFORMATION CONTAINED
HEREIN IS UNCLASSIFIED
DATE 4-9-82 BY SP-16SK/ABG

Tolson
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55 MAR 15 1966

MAILED 19
MAR 3 1966
COMM-FBI

SEE NOTE PAGE TWO.

MAIL ROOM ☐ TELETYPE UNIT ☐

b2/3

Document 13

**Director
Division of Security
Atomic Energy Commission**

Memorandum for Mr. Brown 4-16-68

of 178 kilograms, all but 61 of which AEC considers properly accounted for by normal processing losses. While it cannot say unequivocally that theft or diversion of the 61 kilograms has not taken place, AEC believes that NUMEC consistently underestimated its processing losses and that the loss of the 61 kilograms being charged to the latest subcontract actually represents an accumulation of losses over an eight-year period. Mr. Brown pointed out, however, that because the NUMEC records system was not then so set up, it could not be determined when the various losses occurred or whether material provided for the latest subcontract was used, knowingly or inadvertently, to offset losses on other contracts.

Mr. Brown pointed out that there will be no financial loss to the Government as NUMEC has agreed to pay for the 61 kilograms. In addition, NUMEC now has a better system for controlling nuclear materials and an improvement is also expected through NUMEC's hiring of a former AEC official. Mr. Brown advised, however, that AEC has decided it should make more penetrating checks into NUMEC's operations, including interviews with some of their former employees, but before doing so he felt that the FBI should be consulted to determine whether it desires to assume investigation of the matter.

b7C/ This will confirm the information furnished orally to Mr. Brown by Special Agent [redacted] on February 25, 1968, to the effect that we have given full consideration to this matter and under the present circumstances, we do not intend to assume any investigative responsibility; however, it was requested that the AEC advise us of any further developments coming to its attention concerning this matter which indicate there has been a violation within our jurisdiction.

1 - Mr. J. Walter Yeagley
Assistant Attorney General

b7C/ NOTE: See memorandum from Mr. Brennan, to Mr. Sullivan dated 2/18/68, same caption, prepared by [redacted] which approved this action.

UNITED STATES GOVERNMENT

Memorandum

~~SECRET~~
CONFIDENTIAL

TO : Director, FBI [REDACTED] b7C/4

DATE: 4/19/66

FROM : SAC, Pittsburgh [REDACTED] p b7C/4

SUBJECT: [REDACTED] b7C/3

OO: Pittsburgh b7C/4

4-17-85
Classified by 66850/K9
Declassify on: OADR

ReBulet to Pittsburgh, 4/4/66, and Buairtel to Pittsburgh, 4/11/66.

The Department pointed out in its letter of 3/23/66 that the subject and the Nuclear Materials and Equipment Corporation of Apollo, Pa., has attempted to establish a joint company in Israel. The Department noted that this information was insufficient in itself to establish the requisite agency relationship to bring the subject within the purview of the Foreign Agents Registration Act.

[REDACTED] (b)(1)(4)(b)
(C)

(u) [REDACTED] In view of the interest shown by AEC in this matter, Pittsburgh requests Bureau authority to interview subject to determine if a joint company, known as ISORAD, has in fact been established; and also to determine the exact nature and scope of subject's activities as sales agent for a representative of the Israeli government, namely, the Minister of Defense, Division of Supplies, New York, N. Y. Subject would be interviewed under the guise that certain key individuals in the field of nuclear energy are being interviewed and informed of the Bureau's jurisdiction within the field of internal security.

Per Doc Ltr
4-16-85

- 2 - Bureau (RM) b7C/4
- 1 - Washington Field [REDACTED] (Info) (RM)
- 1 - Pittsburgh

Class. & Ext. By SP-1 GSK/RBG
Reason: FCIM II, 1-2.4.2
Date of Review 4-19-86

ALL INFORMATION CONTAINED
HEREIN IS UNCLASSIFIED
EXCEPT WHERE SHOWN
OTHERWISE

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~~CONFIDENTIAL~~

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

DOCUMENT 18

~~SECRET~~

1 - [REDACTED] b7C/1

SAC, Pittsburgh [REDACTED] b7C/4
REC-125 117-2564-X11
Director, FBI [REDACTED] b7C/4
EX-117 [REDACTED] b7C/3
[REDACTED] b7C/4

4/23/66

DECLASSIFIED BY 5668 SL/DK2
4-17-85
Reurlet 4/19/66.

Authority is granted for the Pittsburgh Office to interview the subject for the purpose of determining whether he is acting in the United States as an agent for the Israeli Government under the provisions of the Foreign Agents Registration Act of 1938, as amended. In view of the allegations received in this case and the Department's request for an investigation, it is not desired that subject be interviewed under any pretext. At the time of the interview the subject should be advised that your investigation in this matter is being conducted at the request of the Internal Security Division of the Department of Justice. Submit the results of your investigation in report form promptly. Upon receipt it will be forwarded to the Department with a request for the Department to advise whether captioned subject is required to register as an agent of a foreign government.

1 - WFO

[REDACTED] b7C/1
(8)

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EXCEPT WHERE SHOWN
OTHERWISE

Class. & Ext. By SP-1 GSK/RBG
Reason FCIM II, 1-2.4.2
Date of Review 4-9-83

NOTE (4)

Per OOG
Letter
4-16-65
6-6-65

Our investigation was instituted based upon information received indicating that subject and his company had been negotiating with the Israeli Atomic Energy Commission to establish a joint company in Israel. By letter dated 3/23/66 the Department pointed out that information developed indicated the possibility that subject might be required to register as a foreign agent. Pittsburgh has completed its investigation and has requested authority to interview subject to develop information desired by the Department.

- Tolson _____
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- Trotter _____
- Tele. Room _____
- Holmes _____
- Gandy _____

53

MAY 3 1966

APR 27 1966
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MAIL ROOM ☐ TELETYPE UNIT ☐

RDC/pj

WBB 5844

FEDERAL BUREAU OF INVESTIGATION

~~CONFIDENTIAL~~

REPORTING OFFICE PITTSBURGH	OFFICE OF ORIGIN PITTSBURGH	DATE 6/21/66	INVESTIGATIVE PERIOD 12/1/65-6/20/66
TITLE OF CASE [REDACTED] b7C/3		REPORT MADE BY [REDACTED] b7C/1	TYPED BY jep
CHARACTER OF CASE [REDACTED] b7C/4			

REFERENCES: Report of SA **[REDACTED] b7C/1** Pittsburgh, 10/25/65
Washington Field letter to Bureau, 12/6/65
Washington Field airtel to Bureau, 4/19/66
Bureau letter to Pittsburgh, 4/28/66

ADMINISTRATIVE: **(c)** **(b)(1)(4)(b)** - P* -
Classified by **SP-4 elw/alm 5668 SLO/K2 3-28**
Declassify on: OADR
Comp. # **240,619**

Dr. ZALMAN SHAPIRO during interview on 6/15/66 appeared to be extremely cooperative and friendly to Bureau Agents.

[REDACTED] b7D/7 did not appear pertinent to this investigation and were, therefore, not examined.

Class. & Ext. By **SP-1 GSK/RBG**
Reason - FCIM II, 1-2.4.2
Date of Review **4-9-82**

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EXCEPT WHERE SHOWN
OTHERWISE

117-2564-X14

Case has been: Pending over one year ☒ Yes ☐ No; pending prosecution over six months ☐ Yes ☒ No

APPROVED **[Signature]** SPECIAL AGENT IN CHARGE

- COPIES MADE:
- 4 - Bureau **[REDACTED] b7C/4 (RM)**
 - 1 - Washington Field **[REDACTED] b7C/4 (Info)(RM)**
 - 2 - Pittsburgh **[REDACTED] b7C/4**

DO NOT WRITE IN SPACES BELOW

REC-50

JUN 23 1966

ALL INFORMATION CONTAINED
HEREIN IS UNCLASSIFIED
DATE **4-9-82** BY **SP-1 GSK/RBG**

Dissemination Record of Attached Report

Notations

b2/3

NAT. INT. SEC.

DOCUMENT 23

COVER PAGE

~~CONFIDENTIAL~~

FEDERAL BUREAU OF INVESTIGATION

1

Date 6/21/66

b7c/1 Dr. KALMAN MORDECAI SHAPIRO of 5452 Bartlett Street, Pittsburgh, Pa., was advised by SA [REDACTED] that he did not have to make a statement, and that any statements that he made must be voluntary and could be used against him in a court of law. He was also advised that he had the opportunity to consult with an attorney prior to making any statements.

Dr. SHAPIRO advised that he was born May 12, 1920, at Canton, Ohio, and furnished the following information:

He is the President of Nuclear Materials and Equipment Corporation (NUMEC), Apollo, Pa. Approximately one year ago his company and the Government of Israel formed a company known as the Israel Numec Isotopes and Radiation Enterprises (ISORAD), Limited, on a partnership basis. NUMEC contributed one-third equity value and obtained 50% of the stock in ISORAD, and the Government of Israel owned the other 50% of the outstanding stock. The Board of Directors of ISORAD consisted of eight members, including four individuals appointed by NUMEC and four members appointed by the Israeli Government. Dr. SHAPIRO currently serves as Chairman of the Board of Directors of ISORAD. The other three members of the Board appointed by NUMEC and who are presently serving on the Board, are Pittsburgh area businessmen, namely, LEON FALK, President of a Pittsburgh re-development center; BENJAMIN ROSEN, prominent Pittsburgh realtor, and PHILLIP POWERS, past President of Western Pennsylvania Power Company who presently serves as Assistant Chairman of ISORAD.

The four Board members representing the Israeli Government occupy responsible positions in Israel, including the head of the Israel Atomic Energy Commission, head of the Research Branch of the Israel Atomic Energy Commission, and head of the Citrus Board of the Israeli Government, as well as a prominent Israeli banker. The last ISORAD Board meeting was held during October, 1965, and was attended by all the American Board members.

On 6/15/66 at Pittsburgh, Pa.

File # [REDACTED]by SA [REDACTED]Date dictated 6/21/66

This document contains neither recommendations nor conclusions of the FBI. It is the property of the FBI and is loaned to your agency; it and its contents are not to be distributed outside your agency.

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PRIOR TO ACQUISITION

File
NUMEC

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b7C/3

[REDACTED]

[REDACTED]

(b)(1)(4)(f)

(S)(C)

By letter dated November 3, 1966, AEC furnished a summary of the foreign activities of NUMEC, which states in part that "NUMEC is a sales agent for the Government of Israel through its Ministry of Defense, Division of Supplies, 830 Third Avenue, New York 22, New York. In this connection, NUMEC has an arrangement with the Israel Atomic Energy Commission to do biological work on insect control and assist in establishing facilities for the irradiation and preservation of citrus fruits. In this latter connection, NUMEC and the Government of Israel (represented by the Israel AEC) have formed a company in Israel called Isotopes and Radiation Enterprises Ltd. (ISORAD) which is an organization to do experimental and commercial work in irradiation processing of foodstuffs and other commodities." (S)(u)

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b7C/3

[REDACTED]

b7D/2

Concerning this publication, [REDACTED]

[REDACTED] that because of the growth of NUMEC there exists a need to establish an effective way for getting information to employees at NUMEC concerning their plans, problems, and activities, and that the publication of this newspaper is intended to serve that purpose.

b2/2

b7D/2

b7D/3

(u) (S) [REDACTED] learned that NUMEC had sustained unaccountable losses of nuclear material, and since, that this material might possibly have been diverted by subject to Israel. [REDACTED] that about the same period of time that NUMEC sustained the unaccountable losses of U-235. [REDACTED]

b7D/2

[REDACTED] advised that at least one large irradiator was manufactured, and a number of smaller units called "Howitzers" were manufactured and sent to Israel. Source was of the opinion that had U-235 or any other nuclear material been available for shipment to Israel, it would have been a simple matter of placing large quantities of the material in these food irradiator units and shipping to Israel with no questions asked.

b2/2

b7D/3

(u) (S) [REDACTED] made available a copy of attached four-page document entitled, "NUMEC" and bearing the subtitle, "Neutron-Pac: irradiator-Howitzer NAC-64," which describes the irradiator-Howitzer of the type manufactured and sent to Israel by subject, according to source.

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NUMEC

Nuclear Materials and Equipment Corporation, internationally recognized as a leading manufacturer of nuclear materials, equipment and radioisotopes, offers another new commercial product—the NUMEC Neutron-Pac®. Through its inherent versatility, this unique neutron irradiator-howitzer enables a diversity of experiments in the areas of chemistry, physics, biology and metallurgy.

Functional capabilities of the Neutron-Pac® include:

- Demonstration and investigation of neutron phenomena
- Irradiation of biological specimens including small animals, plants and seeds
- Generation of appreciable quantities of radioisotopes
- Activation analysis of gaseous, liquid and solid materials

Description

The Neutron-Pac® is a cylindrical tank containing five fixed thermal radiation positions, an irradiation well with removable plugs of solid moderating material and a liquid irradiation tank. Neutron sources or material for bombardment may be inserted in irradiation positions in the plugs, or the plugs may be entirely removed to permit introduction of an animal cage or a twelve liter solution container for irradiation by sources within or below the liquid. From one to three fast or thermal neutron beam ports are also available as optional features.

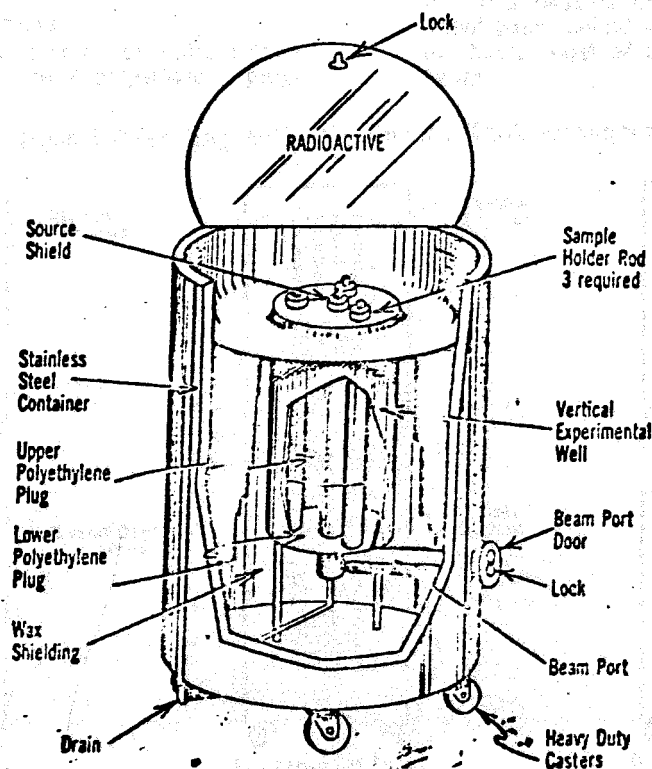
An activation potential (thermal neutron flux) of 7.5 to 8.0×10^4 thermal neutrons per square centimeter per second is produced from three 2 curie NUMEC Pu-Be or Am-Be neutron sources. While neutron interaction can be demonstrated with only a single 1 or 2 curie source, up to 30 curies can be used safely.

The stainless steel irradiator tank is carefully filled with a special paraffin preparation which provides efficient neutron moderation and fast neutron shielding. Irradiation with fast neutrons is accomplished through the use of cadmium or boron liners which filter out the thermal neutrons.

Operational Features

The NUMEC Neutron-Pac® readily provides various types of irradiation facilities; the more important operational features include:

- A single position high-efficiency thermal neutron facility with reproducible geometry
- Simultaneous irradiation in three reproducible geometry thermal neutron positions
- Thermal or fast neutron small animal irradiation facility
- Production of up to millicurie quantities of radioisotopes
- Infinitely variable geometry for thermal neutrons in a liquid filled facility
- Fast and thermal neutron beams for irradiation and attenuation experiments



NUMEC

~~CONFIDENTIAL~~

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b7C/3

[REDACTED]

b7D/9

b7C/17

[REDACTED]

the contract between LRL and NUMEC under which the firm processed nuclear material.

[REDACTED]

Certain aspects of the performance of NUMEC under the contract had been unsatisfactory, particularly in the area of health standards expected of the firm in handling toxic materials, regarding routine handling and safeguarding of classified information furnished the company and regarding unexplained loss of nuclear material.

b7C/17

b7D/9

Under the contract, NUMEC was furnished highly sensitive information in the secret classification concerning operations at LRL. [REDACTED] no reason to think that such information had ever been compromised in any manner through the actions of anyone in the firm. He did note, however, that security procedures in handling such information had been unsatisfactory and felt this would enhance the possibility of inadvertent compromise.

b7D/9

b7C/17

[REDACTED]